



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,647	01/18/2001	Galina Dorozhkina	109289.00173	6089
28765	7590	05/31/2006	EXAMINER	
WINSTON & STRAWN LLP 1700 K STREET, N.W. WASHINGTON, DC 20006			BASHORE, ALAIN L	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/761,647

Applicant(s)

DOROZHKINA ET AL.

Examiner

Alain L. Bashore

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,17-19,21,22,25,31-34 and 38-46 is/are pending in the application.
- 4a) Of the above claim(s) 18,19,21-22,25,31 and 38-46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 32-34 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glushko et al in view of [either Otaki or Kashiwagi et al.] further in view of [Oxman et al and Glotfelter et al].

Glushko et al. teaches a method of making an optical information storage medium (Abstract), the method comprising (1) disposing a polymerizable composition .64" between a base 1.2" and a stamper '16" (i.e., a covering layer), at least one of the

Art Unit: 1762

base and the covering layer having a first relief pattern on a side facing the polymerizable composition, (2) distributing the polymerizable composition between the base and the covering layer, (3) polymerizing the polymerizable composition while the composition is distributed between the base and the covering layer to form a polymerized layer having a second relief pattern corresponding to the first relief pattern, (4) separating the polymerized layer from the first relief pattern (i.e., the stamper), and (5) filling the second relief pattern (i.e., the pattern in the polymerized layer 14) with a fluorescent information storage material 11 (Abstract, Figures 1A - 11, page 1, lines 2 - 4, pages 3 - 4, page 5, lines 26 - 28, and pages 6 - 9).

Glushko et al. does not explicitly teach spinning the base, the polymerizable composition, and the covering layer to distribute the composition. However, the pattern-forming process of Glushko et al. generally comprises Uv-curing a photopolymerizable material located between a transparent substrate / base material and a transparent patterned stamper by radiating UV-light through either the transparent substrate / base material or the transparent stamper (pages 6 - 7). The purpose of this process is to produce a cured polymeric base having a desired pattern corresponding to the pattern of the stamper so that the desired pattern can be subsequently filled with a fluorescent information storage material.

Otaki teaches that, in the art of producing a cured resin optical disk having a desired pattern (i.e., a process analogous to that of Glushko et al.), it is desirable to spin

Art Unit: 1762

the base, the polymerizable (resin) composition, and the stamper in order to distribute the polymerizable composition between the base and the stamper while irradiating the composition through the transparent base with UV-light, thereby curing the composition and insuring that the resultant patterned optical disk has a truly circular shape (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art to spin the base, the polymerizable composition, and the covering layer to distribute the composition in the process of Glushko et al., as taught by Otaki, with the reasonable expectation of successfully and advantageously producing a patterned polymeric optical disk (as desired by Glushko et al.) that is accurately formed to have a desired shape (e.g., circular), due to the nature of the spinning / UV curing process taught by Otaki.

Alternatively, Kashiwagi et al. teaches that, in the art of producing an optical recording medium, it is desirable to spin the base, the polymerizable (resin) composition, and the stamper in order to distribute the polymerizable composition between the base and the stamper prior to irradiating the composition through the transparent base with Uv-light, thereby curing the composition and insuring that the resultant patterned optical disk has the specific thickness desired by the purveyor in the art (Figures 13 - 15, Col.10, lines 49 - 67).

Therefore, it would have been obvious to one of ordinary skill in the art to spin the base, the polymerizable composition, and the covering layer to distribute the composition in the process of Glushko et al., as taught by Kashiwagi et al., with the reasonable expectation of successfully and advantageously producing a patterned polymeric optical disk (as desired by Glushko et al.) that is accurately formed to have a desired thickness due to the nature of the spinning / UV curing process taught by Kashiwagi et al.

Glushko et al, Otaki, and Kashiwagi et al do not disclose a first compound having at least one glycidyl ether functionality that is polymerizable by hybrid mechanism, and a second compound having an epoxy group that is polymerizable by cation mechanism.

Oxman discloses a first compound having at least one glycidyl ether functionality that is polymerizable, and a second compound having an epoxy group that is polymerizable by cation mechanism (para 0097). Glotfelter et al teaches hybrid mechanisms from ether functionalities (col 5, lines 24-28).

It would have been obvious to one with ordinary skill in the art to include a first compound having at least one glycidyl ether functionality that is polymerizable by hybrid mechanism, and a second compound having an epoxy group that is polymerizable by cation mechanism because both Oxman and Glotfelter et al are teaching qualities

Art Unit: 1762

inherently required for the polymerization of ethers and epoxides to provide photo-reactive substances.

Regarding Claim 2, the combination of Glushko et al. and either Otaki or Kashiwagi et al. teaches that the composition is photopolymerizable in light, the covering layer is transparent to the wavelength of the light, and the polymerizing step comprises irradiating the light to the composition through the covering layer (page 6, lines 16 - 18, page 7, lines 2 - 4 of Glushko et al; Abstract of Otaki; Col.10, lines 49 - 67 of Kashiwagi et al.).

Regarding Claim 32, the combination of Glushko et al. and either Otaki or Kashiwagi et al. teaches repeating the steps to form a plurality of information layers, and adhering the plurality of layers together to form a multilayer optical information storage medium (page 9, lines 4 - 26, page 10, lines 23 - 27, page 13, lines 14 - 16 of Glushko et al.).

4. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glushko et al in view of [either Otaki or Kashiwagi et al.] further in view of [Oxman et al and Glotfelter et al] in further view of Olson et al.

The teaches all the limitations of Claim 33 as set forth above except for a method

Art Unit: 1762

wherein the polymerizable composition is doped with 3% IRGACURE 1700. However, the polymerizable composition of Glushko et al. is a Uv-curable photopolymeric composition in general (page 6, lines 3 - 9). Olson et al. teaches that, in the art of Uv-curable photopolymeric compositions, it is desirable to include a photoinitiator such as IRGACURE 1700 in the composition so that the composition can be cured by irradiation with light (Col.10, lines 64 - 66, Col.1 1 , lines 1 - 18). The photoinitiator is included in an amount of 0.1 to 10 parts by weight (i.e., a range that overlaps the applicant's claimed value of 3%) (Col.1 1, lines 16 - 18).

Therefore, it would have been obvious to one of ordinary skill in the art to include from 0.1 to 10 ppw of a photoinitiator such as IRGACURE 1700 in the polymerizable composition of Glushko et al., as taught by Olson et al., in order to enhance the photopolymerizability / Uv-curability of the composition (i.e., due to the presence of the photoinitiator).

5. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glushko et al in view of [either Otaki or Kashiwagi et al.] further in view of [Oxman et al and Glotfelter et al], and in further view of [Russell and Suga et al].

The combination teaches all the limitations of Claim 34 as set forth above, except for a method wherein the polymerizable composition is doped with 4% benzoyl peroxide

Art Unit: 1762

and 0.1% dibutylaniline. However, the polymerizable composition of Glushko et al. is a UV- curable photopolymeric composition in general (page 6, lines 3 - 9).

Russell teaches that a small amount of benzoyl peroxide acts as a photo-initiator, and such peroxide has the added advantage that it can be used in smaller amounts than other photoinitiators and does not discolor or yellow the cured materials (Col.2, lines 38 - 54). According to Russell, a combination of photoinitiators may be used (Col.2, lines 53 - 54).

Suga et al. teaches that a polymerization promotor such as dibutylaniline (0.01 to 10 wt.O/c - a value that encompasses the applicant's claimed value) and a polymerization initiator such as benzoyl peroxide (0.01 to 10 wt.O/o - a value that encompasses the applicant's claimed value) can be used in order to promote the curing of a polymerizable composition (Abstract, Col.3, lines 18 - 50, Col.5, lines 3 - 26, Col.6, lines 28 - 30).

In view of these teachings, it would have been obvious to one of ordinary skill in the art to include a combination of dibutylaniline (0.1 - 10%) and benzoyl peroxide (0.1 - 10%) as polymerization promoters / initiators in the polymerizable composition of Glushko et al. in order to enhance the photopolymerizability / Uv-curability of the composition (i.e., due to the presence of the polymerization promoters / initiators). By using benzoyl peroxide as one of the photoinitiators, one of ordinary skill in the art would

Art Unit: 1762

have reasonably expected to advantageously (1) reduce the amount of initiator required to promote curing and (2) prevent discoloration of the cured material.

Allowable Subject Matter

6. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alain L. Bashore whose telephone number is 571-272-6739. The examiner can normally be reached on about 7:30 am to 5:00 pm (Mon. thru Thurs.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1762

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alain L. Bashore
Primary Examiner
Art Unit 1762